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EXAMINER

KACKAR, RAM N

ART UNIT PAPER NUMBER

1763

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Please find below and/or attached an Office communication concerning this application or proceeding.



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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/064,451
Filing Date: July 16, 2002
Appellant(s): JOHNSON ET AL.

Mohammad S. Rahman
For Appellant

EXAMINER'S ANSWER

MAILED

FEB 14 2006

GROUP 1700

This is in response to the appeal brief filed 12/23/2005 appealing from the Office action mailed 5/25/2005.

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(1) Real Party in Interest

A statement identifying the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The amendment after final rejection filed on 1/31/2005 has been entered.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is deficient as below:

Specification at paragraph 21 describes the following with respect to Fig 2.

The angle 200 is generally between 5 and 10 degrees, although the invention is not limited to this specific range of angles, but is applicable to all ranges of appropriate angles, depending upon the specific application being addressed. Therefore, the angle 201 comprises an acute angle. Thus, the angle between the bottom of the pocket 125 and the linear inclined surface of the projection 115 is less than 90 degrees (e.g., 80-85 degrees).

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It is clear from the above that contrary to description in the **Summary of Claimed Subject Matter**, an angle of 80 degrees is not excluded and there appears to be no special significance to an angle greater than 80 degrees but not exactly 80 degrees. Further the specification suggests that angle could be optimized according to application.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is generally correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

6596086	Honma et al	7-2003
5785764	Hoshina et al	7-1998
5968379	Zhao et al	10-1999

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Objection

1. Claim 17 is objected to because of the following informalities: Claim 17 is objected to as depending upon cancelled claim 16. For this office action claim 17 is assumed to depend upon claim 15. Appropriate correction is required.

Claim Rejections – 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-7, 9-15 and 17-19 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement.

The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The applicant has amended claims 1, 7 and 15 to claim an acute angle of more than 80° degrees for the beveled edges of projections. The specification does not discuss the acute angle to be greater than 80° degrees at the exclusion of an angle of exactly 80°. This is important in

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view of absence of any disclosed inventive advantage accruing from an angle greater than 80° which would not accrue from an angle exactly 80.

The specification discloses the following:

The angle 200 is generally between 5 and 10 degrees, although the invention is not limited to this specific range of angles, but is applicable to all ranges of appropriate angles, depending upon the specific application being addressed. Therefore, the angle 201 comprises an acute angle. Thus, the angle between the bottom of the pocket 125 and the linear inclined surface of the projection 115 is less than 90 degrees (e.g., 80-85 degrees).

Clearly, there is no disclosure and appreciation of any unexpected advantage of an angle greater than 80 but not exactly 80.

Claim Rejections – 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. **Claims 1-7, 9-15 and 17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Honma et al (US 6596086) in view of Hoshina et al (US 5785764).**

Honma et al disclose a susceptor having a pocket to hold substrate having an inner edge and a lower surface (Fig 1 5a) and opening in lower surface for lift pins to lift the substrate (5b

Honma et al do not disclose plurality of beveled edge projections extending radially inward from the inner edge

Hoshina et al disclose a susceptor with a pocket to hold a substrate, plurality of C shaped projections (Fig 5A-17) extending radially inwards at an acute angle of 80 degrees (complementary 10 degrees) with respect to bottom of pocket (Col 3 lines 10-43 and Col 7 lines 5-15 and Fig 1A). Inherently these projections maintain a gap below the projection and restrict the movement of the standard substrate with a straight edge.

Therefore it would have been obvious for one of ordinary skill in the art at the time of invention to have a plurality of projection in order to hold substrate in position with a very small area of contact.

Regarding the limitation of the angle being even slightly greater than 80 degrees, it should be understood that slight variability of angle would be obvious in view of experimental optimization and difficulty of maintaining close tolerance.

5. Claims 1-7, 9-15 and 17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zhao et al (US5968379) in view of Hoshina et al (US 5785764).

Zhao et al disclose a susceptor having a pocket to hold substrate having an inner edge and a lower surface (Fig 2-34) and opening in lower surface for lift pins to lift the substrate (Col 11 line 1-18 and Col 19 lines 1-8).

Zhao et al do not disclose plurality of beveled edge projections extending radially inward from the inner edge

Hoshina et al disclose a susceptor with a pocket to hold a substrate, plurality of C shaped projections (Fig 5A-17) extending radially inwards at an acute angle of 80 degrees (complementary 10 degrees) with respect to bottom of pocket (Col 3 lines 10-43 and Col 7 lines

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5-15 and Fig 1A). Inherently these projections maintain a gap below the projection and restrict the movement of the standard substrate with a straight edge.

Therefore it would have been obvious for one of ordinary skill in the art at the time of invention to have a plurality of projection in order to hold substrate in position with a very small area of contact.

(10) Response to Argument

Following is stated in response to applicant's argument that in Hoshina the acute angle is disclosed in the range of 40-80 but not more than 80.

MPEP 2144.05 states that a prima facie case of obviousness exists where the claimed ranges and prior art ranges do not overlap but are close enough that one skilled in the art would have expected them to have the same properties. *Titanium Metals Corp. of America v. Banner*, 778 F.2d 775, 227 USPQ 773 (Fed. Cir. 1985) (Court held as proper a rejection of a claim directed to an alloy of "having 0.8% nickel, 0.3% molybdenum, up to 0.1% iron, balance titanium" as obvious over a reference disclosing alloys of 0.75% nickel, 0.25% molybdenum, balance titanium and 0.94% nickel, 0.31% molybdenum, balance titanium.).

In this case the specification has not provided any guidance to assume that an acute angle greater than 80 (say 80.1) has different properties than an angle of 80. In the brief the applicant has dwelled greatly on the merits of an angle greater than 80 but has not provided any persuasive argument that prima facie case of obviousness does not exist in view of the claimed ranges and prior art ranges being so close.

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Further applicant argues that there would be no motivation to combine Honma and Hoshina.

This argument is not persuasive since lift pins taught by Honma and projections to hold substrate in a pocket are complementary advantages which would motivate one of ordinary skill in the art to combine in a single apparatus.

Applicant further argues that Hoshina teaches away from claimed invention.

This is not correct since Hoshina et al teach preference for an angle equal to 80 degrees. Only for situation when a thick film is deposited they prefer the angle to be not larger than 80 degrees. That is why they claim an angle of 40-80 degrees, both inclusive (Col 7 lines 10-12).

Applicant's remarks regarding the rejection relying on Zhao et al in view of Hoshina et al are similar; the above response applies to those remarks too.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,



Ram Kackar

Primary Examiner AU 1763

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